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INDUSTRIAL FISHERY PRODUCTS

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SITUATION & OUTLOOK

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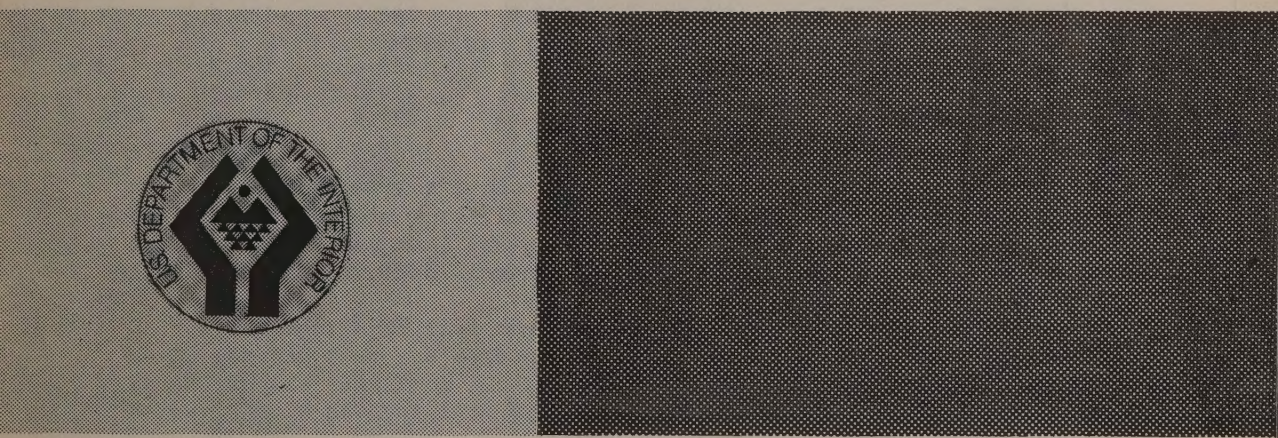

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FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES

Production of fish meal, oil, and solubles; meal imports; and menhaden landings, 1935-67[1/]

Year	All fish meal			Menhaden			
	U.S. production[2/]	Imports	Total supplies	Landings	Production		
					Meal	Oil	Solubles
	Thousand short tons			Million pounds	Thousand tons	Million pounds	Thousand tons
1935	212.4	27.9	240.3	434.4	30.4	30.5	-
1936	243.8	43.7	287.5	516.1	42.4	36.6	-
1937	219.7	92.8	312.4	529.2	35.8	29.2	-
1938	205.2	39.9	245.1	517.5	39.3	31.4	-
1939	226.1	61.4	287.5	574.8	53.0	45.0	-
1940	193.2	46.1	239.4	634.6	56.2	43.3	-
1941	236.8	32.8	269.8	775.1	75.3	45.3	-
1942	171.1	22.4	193.5	482.6	50.5	38.5	-
1943	190.4	3.2	193.6	615.6	65.4	43.0	-
1944	213.1	10.2	223.3	686.0	69.2	45.5	-
1945	200.7	3.1	203.8	759.1	77.5	62.5	-
1946	199.6	8.9	208.5	916.0	94.6	73.2	-
1947	186.4	8.6	195.0	948.2	98.6	63.6	-
1948	199.5	41.1	240.7	1,008.0	104.1	65.7	-
1949	237.2	52.2	289.4	1,072.6	113.4	62.2	-
1950	239.9	63.9	303.8	1,000.5	103.4	76.6	-
1951	209.7	128.5	338.2	1,103.9	115.5	94.0	-
1952	221.4	203.5	424.9	1,386.3	144.0	96.7	-
1953	238.8	131.5	370.3	1,683.4	174.8	133.7	39.0
1954	257.0	145.8	402.7	1,740.6	183.1	139.8	56.3
1955	264.5	98.0	362.5	1,848.3	190.6	159.2	61.9
1956	295.1	90.4	386.2	2,076.6	210.6	168.2	72.9
1957	264.1	81.2	345.3	1,681.6	172.4	118.5	69.4
1958	248.1	100.4	348.5	1,544.7	158.1	128.0	72.5
1959	306.6	132.9	439.5	2,193.9	223.9	154.7	108.1
1960	290.1	131.6	421.7	1,999.0	218.4	183.4	65.8
1961	311.3	217.8	529.1	2,290.0	247.6	235.2	73.3
1962	312.3	252.3	564.6	2,227.3	239.7	232.6	85.2
1963	255.9	376.3	632.2	1,787.6	184.2	167.6	74.8
1964	235.3	439.1	674.4	1,530.6	160.3	157.7	68.7
1965	254.0	270.7	514.7	1,651.0	176.0	175.2	73.2
1966	224.2	447.8	671.9	1,275.6	135.0	144.2	60.8
1967[3/]	211.2	651.5	862.7	1,133.2	119.1	101.4	51.8

[1/] Figures may not add because of rounding.

[2/] Includes meal made from shellfish.

[3/] Preliminary.

INDUSTRIAL FISHERY PRODUCTS

Situation and Outlook

Approved by the Bureau of Commercial Fisheries Situation and Outlook Board, July 2, 1968

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SUMMARY

REVIEW: JANUARY-APRIL 1968

Fish Meal

The United States produced an estimated 18,500 short tons of fish meal during January-April 1968--down 25 percent from the same period in 1967. Menhaden meal was 21 percent of total production during the first 4 months of 1968, compared to 20 percent last year.

U.S. imports of fish meal during January-April were 256,900 tons--up 22 percent from the same period last year. Seventy-eight percent of these imports came from Peru, 8 percent from Chile, 7 percent from Norway, and 6 percent from Canada.

Total domestic supplies of fish meal (production plus imports) during the first 4 months of 1968 were 275,400 tons--up 17 percent from the same period in 1967 and up 62 percent from the 1963-67 average.

Imports accounted for 93 percent of these supplies in January-April 1968, compared to 90 percent for the same period in 1967 and 88 percent for 1963-67.

Member countries of F.E.O. (Fishmeal Exporters Organization)[1/] produced 845,400 metric tons (931,900 short tons) of fish meal in January-March 1968 or about 87 percent of world fish meal production. Peru made most of the fish meal--630,800 metric tons (695,300 short tons) or 75 percent of total F.E.O. production.

F.E.O. countries, except Angola and Iceland, for which complete statistics are not yet available, exported 797,800 metric tons (879,400 short tons) of fish meal in January-March 1968--up 54 percent from exports for the same countries in 1967. Peru exported 550,400 metric tons (606,700 short tons) the first quarter of 1968 and another 167,000 metric tons (184,100 short tons) in April, making a total of 717,400 metric tons (790,800 short tons) for the first 4 months. One-fourth of these exports came to the United States.

Stocks of fish meal held by F.E.O. countries (except Angola and Iceland) on April 1, 1968, were 795,700 metric tons (877,100 short tons)--down 7 percent from the amount held on April 1, 1967. Peru held 84 percent of these stocks on April 1, 1968, and was reported to be holding about 727,900 metric tons (802,400 short tons) on June 1.

The number of broiler chicks on feed and the price of soybean meal are major factors affecting the demand for fish meal in the United States. During January-April 1968, 872.6 million broiler chicks were started in the 22 major broiler-producing States--down 2 percent from the number placed the same period last year but up 10 percent from the 1963-67 average. The price of soybean meal (50 percent solvent) at Decatur, Ill., averaged $80.70 per short ton the first 4 months of 1968 compared to $84.70 per ton for the same period in 1967. The average for May 1968 was $81.90 per ton.

Prices of menhaden and Peruvian fish meal increased during the month of May. The average price of 60 percent menhaden meal at New Orleans the last week of May was about $145 per short ton, bagged, Gulf Coast[2/] points. Supplies of menhaden meal at New Orleans had

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1/ F.E.O. members are Angola, Chile, Iceland, Norway, Peru, South Africa, and South West Africa.

2/ U.S. coast on the Gulf of Mexico.

previously been reported as exhausted, and the last reported price was $130 per ton the first week in October 1967. During the latter part of June, New York prices for menhaden meal were about $149 per ton, bagged, f.o.b. East Coast points.

The price of Peruvian fish meal (bagged, 65 percent protein) at New York rose from an average of $117.60 per short ton f.o.b. East Coast ports in January-April to $131.90 per ton in May and $140.00 in June.

Fish Solubles

An estimated 7,000 short tons of fish solubles were produced the first 4 months of 1968. Imports were only 1,000 tons, making total supplies (excluding stocks, which are not reported) about 8,000 tons.

The average price of menhaden solubles was $54.05 per ton f.o.b. East Coast points in May 1968 and $53.75 per ton in June.

Fish Oil

The United States produced 6.6 million pounds of fish oil in January-April 1968--up 3 percent from the same period last year. Thirty-five percent of this oil came from menhaden.

Stocks of fish oil at the beginning of May 1968 were 47.6 million pounds compared to 80 million pounds held on January 1 this year and 73.4 million pounds held on May 1 last year.

Industrial consumption of fish oil during January-April was 10.7 million pounds--down 15 percent from the same period in 1967.

The United States exported 19.7 million pounds of fish oil during the first 4 months of 1968. Seventy-six percent of these exports went to Sweden, 17 percent to the Netherlands, and 7 percent to Canada.

The average price of crude menhaden oil during January-April 1968 was 5.8 cents per pound f.o.b. East Coast plants. In June, New York prices varied from 4.75 cents to 5.75 cents per pound and averaged 5.25 cents per pound.

Fish Meal

The Bureau of Commercial Fisheries Branch of Current Economic Analysis estimates that U.S. production of fish meal will be 75,000 to 85,000 tons during the third quarter of this year. Imports are expected to be 190,000 to 210,000 short tons. Therefore, the total quantity available (excluding stocks, which are not known) is estimated to be 265,000 to 295,000 tons.

Production of fish meal by F.E.O. countries during July-September 1968 is expected to be at least 390,000 metric tons (429,900 short tons). Total F.E.O. exports of fish meal during the third quarter are estimated at 640,000 metric tons (705,500 short tons). F.E.O. stocks of fish meal are estimated to be 935,000 to 950,000 metric tons on July 1 this year and 685,000 to 700,000 tons at the end of the third quarter.

Broiler chicks placed on feed during the third quarter likely will number about 705 million chicks--up 3 percent from the number placed the third quarter last year. Given this number of chicks, and assuming the ratio of fish meal price to soybean meal price is about 1.65 to 1, between 240,000 and 260,000 short tons of fish meal probably will be used in July-September 1968. More fish meal would be used if the price ratio were lower.

As mentioned above, F.E.O. stocks of fish meal are expected to be 935,000 to 950,000 metric tons on July 1, 1968. This amount of fish meal should be more than enough to satisfy the needs of feed manufacturers during the third quarter. U.S. feed manufacturers likely will use a maximum amount of fish meal in their rations if the price of fish meal generally stays below $145 per ton and remains competitive with soybean meal.

Fish Solubles

Production of fish solubles is estimated to be 25,000 to 30,000 tons in July-September, and imports are expected to be less than 500 tons.

Fish Oil

It is estimated that 45 million to 55 million pounds of fish oil will be produced in the United States during the third quarter of 1968.

Industrial consumption of fish oil during the third quarter is not expected to be over 10 million pounds even if the current low prices were to hold through that period.

REVIEW

January-April 1968

MENHADEN LANDINGS

Menhaden landings during January-April 1968 were an estimated 34.5 million pounds--24 percent below the landings for the same period last year and 27 percent below the 1963-67 average (table 1). Landings on the Gulf Coast were 28.2 million pounds during the first 4 months of 1968, or 82 percent of total landings. During the same period last year, Gulf Coast landings were 35.5 million pounds or 78 percent of total landings (table 1). Bad weather hampered purse seining in the Gulf during April and the first part of May.

Atlantic Coast menhaden landings were 6.2 million pounds or 18 percent of total landings (table 1). All the Atlantic Coast landings were in the South Atlantic area. Last year during January-April, menhaden landings on the Atlantic Coast were 10 million pounds--61 percent more than this year.

Table 1.--Menhaden landings by area, January-April 1967, 1968, and 1963-67 average

Area	1963-67 average		1967		1968[1/]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Middle Atlantic	-	-	-	-	-	-
Chesapeake	3.3	7.0	-	-	-	-
South Atlantic	6.4	13.5	10.0[2/]	22.1	6.2	18.1
Total Atlantic	9.7	20.5	10.0	22.1	6.2	18.1
Gulf Coast	37.7	79.5	35.3	77.9	28.2	81.9
Total U.S.[3/]	47.4	100.0	45.3	100.0	34.5	100.0

[1/] Preliminary.

[2/] Includes a few landings in the Chesapeake area.

[3/] Figures may not add to total because of rounding.

Note: Percents are calculated with unrounded numbers.

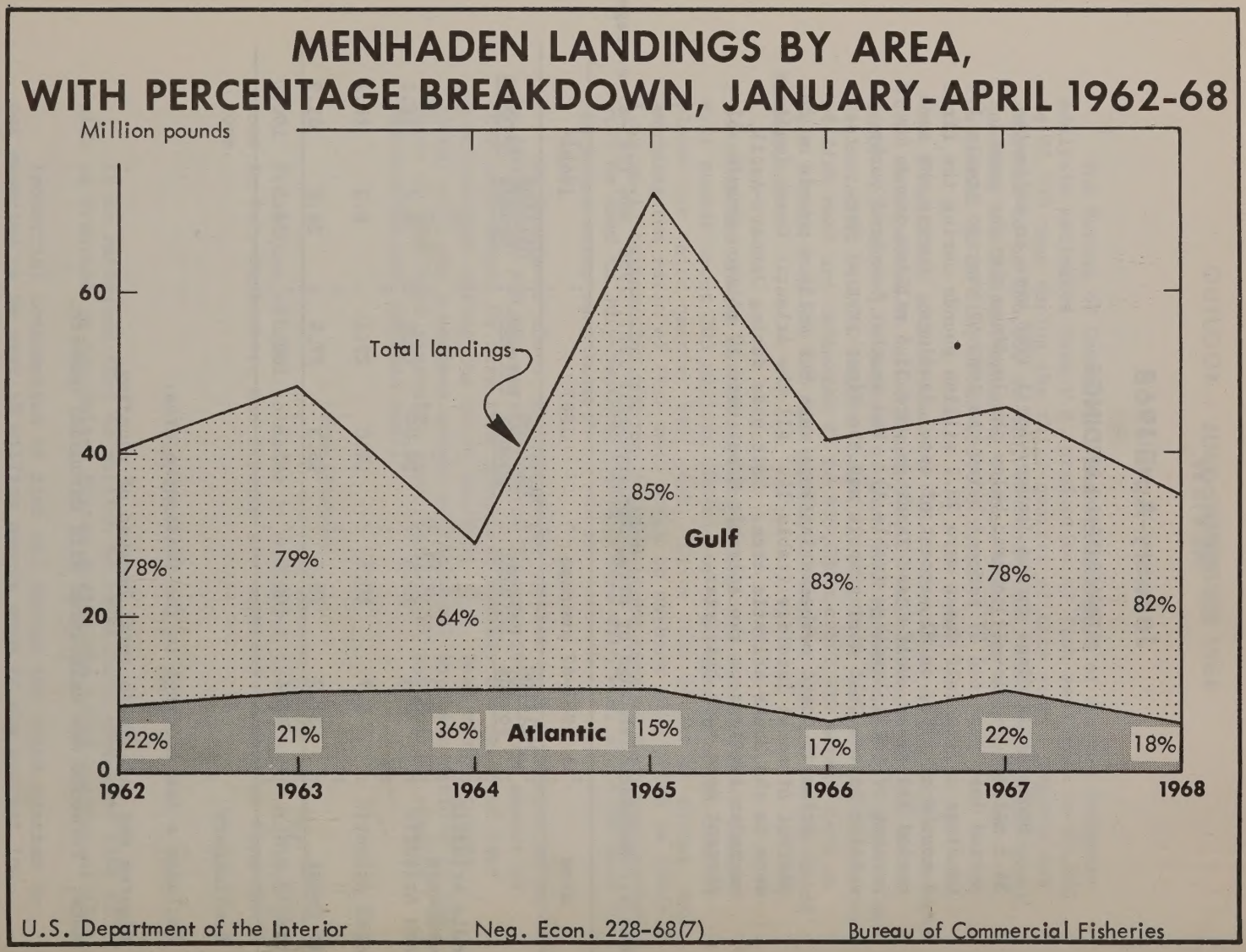

MENHADEN LANDINGS BY AREA,
WITH PERCENTAGE BREAKDOWN, JANUARY-APRIL 1962-68
Million pounds
60
40
20
0
Total landings
Gulf
Atlantic
85%
78%
79%
64%
83%
78%
82%
22%
21%
36%
15%
17%
22%
18%
1962
1963
1964
1965
1966
1967
1968
U.S. Department of the Interior
Neg. Econ. 228-68(7)
Bureau of Commercial Fisheries

Figure 1

FISH MEAL

Supply

Production for January-April 1968--Down 25 Percent from 1967

U.S. production of fish meal for January-April 1968 is estimated to be 18,500 short tons--down 25 percent from the same period in 1967, and down 8 percent from the 1963-67 average (tables 2 and 3). Meal produced from menhaden was 3,800 tons or 21 percent of total production during the first 4 months of 1968 (table 3). In the same period last year, production of menhaden meal was 4,800 tons or 20 percent of total production. Eighty-two percent of the menhaden meal was produced on the Gulf Coast during the first 4 months of 1968, whereas 18 percent was produced in the South Atlantic area (table 4). During the same period in 1967, 77 percent was produced on the Gulf Coast and 23 percent was produced in the South Atlantic area.

Meal made from fish other than menhaden the first 4 months of 1968 was an estimated 14,700 short tons or 79 percent of total production (table 3). Most of this meal was in the "unclassified" category which includes groundfish (table 3). Production from these fish was 6,700 tons--up 34 percent from the first 4 months of 1967, after including groundfish in the "unclassified" category. Meal made from tuna, mackerel, and anchovies was 6,400 tons--down 47 percent from the first 4 months of 1967 and down 22 percent from the 1963-67 average.

January-April Imports--Up 22 Percent Over 1967

The U.S. imported 256,900 short tons of fish meal the first 4 months of 1968--up 22 percent from the same period last year, and up 72 percent from the 1963-67 average (table 5). Imports for January 1968 were 90,900 tons--more than double imports for the same month last year.

Imports of fish meal from Peru during January-April were 199,600 tons--up 41 percent from the same period in 1967 and up 80 percent from the 1963-67 average (table 6). Seventy-eight percent of total imports came from Peru in January-April 1968, compared to 67 percent in 1967 and an average of 74 percent for 1963-67. Fish meal imports from Chile were 20,200 tons during the first 4 months of 1968, compared to 7,500 tons during the same period in 1967. Norway shipped 18,900 tons of fish meal to the United States in January-April 1968--less than half the amount shipped the same period last year.

Table 2.--U.S. production of fish meal by month, 1960-68[1/]

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[2/]
	Thousand short tons								
January	3.8	2.7	2.9	2.3	2.1	3.2	2.8	5.7	1.9
February	3.1	2.1	3.6	2.9	2.3	2.9	2.3	3.9	2.0
March	3.1	2.8	4.2	2.7	3.1	3.8	5.7	4.9	3.8
April	6.1	6.1	9.4	8.4	8.1	11.3	11.3	10.1	10.7
May	19.8	34.4	40.5	40.3	32.1	25.1	20.3	17.2	
June	44.3	54.4	61.2	35.3	49.0	48.6	36.9	33.5	
July	56.3	63.4	55.6	38.9	45.2	50.1	36.5	36.4	
August	51.2	57.5	40.4	43.7	33.5	42.0	31.4	33.6	
September	38.5	28.8	31.7	24.7	22.8	21.1	23.2	20.3	
October	24.1	16.2	36.0	18.5	8.6	12.3	11.0	11.4	
November	10.8	10.1	10.2	13.4	10.7	12.1	18.9	15.4	
December	9.2	12.8	2.7	10.0	7.7	9.8	12.0	9.0	
Total[3/]	270.3	291.3	298.4	241.1	225.2	242.3	212.4	201.4	

[1/] Excludes meal made from shellfish.

[2/] Preliminary.

[3/] Figures may not add to total because of rounding.

Table 3.--U.S. production of fish meal by raw material source, January-April 1967, 1968, and 1963-67 average

Source	1963-67 average		1967		1968[1/]	
	Thousand short tons	Percent	Thousand short tons	Percent	Thousand short tons	Percent
Alewives	0.7	3.5	1.5	6.2	-	-
Groundfish	1.2	6.2	1.6	6.4	[2/]	-
Herring	0.7	3.7	1.1	4.5	1.6	8.6
Menhaden[3/]	5.0	24.8	4.8	19.6	3.8	20.6
Tuna, mackerel and anchovies	8.2	41.1	12.1	49.4	6.4	34.4
Unclassified	4.1	20.6	3.4	14.0	6.7	36.3
Total[4/]	20.0	100.0	24.6	100.0	18.5	100.0

[1/] Preliminary.

[2/] Included in "unclassified."

[3/] Includes a small quantity of other species.

[4/] Figures may not add to total because of rounding.

Table 4.--Production of menhaden meal by area and by month, 1960-68[1/]

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[2/]
	Thousand short tons								
	Atlantic Coast								
January	0.3	0.5	0.2	-	0.1	0.2	0.5	-	-
February	1/	-	-	-	-	-	-	-	-
March	1/	-	-	-	-	-	-	-	-
April	0.7	1.2	0.7	1.1	0.9	0.6	0.2	1.1	0.7
May	3.2	9.0	18.0	12.8	5.4	3.9	1.1	1.9	
June	19.3	26.0	30.5	12.9	12.2	12.6	4.6	6.6	
July	30.2	35.9	23.2	13.5	11.7	8.8	6.0	6.0	
August	30.8	28.9	15.7	11.6	11.5	12.7	7.2	6.8	
September	18.5	17.7	12.3	9.8	7.2	7.5	5.8	3.5	
October	15.8	7.8	23.8	6.1	4.4	6.5	5.7	4.5	
November	8.0	6.6	6.5	8.9	7.2	8.5	14.8	10.2	
December	5.9	9.4	0.3	6.3	5.0	6.1	7.1	6.2	
Total[3/]	132.7	143.0	131.2	83.0	65.6	67.4	53.0	46.9	
	Gulf Coast								
January	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	0.1	-	-
April	0.9	2.4	3.3	4.0	2.0	6.7	3.7	3.7	3.1
May	12.2	21.1	13.9	22.0	17.3	14.9	12.9	8.4	
June	19.2	23.7	23.1	16.7	27.5	27.8	22.5	16.7	
July	20.3	21.5	25.0	18.0	22.3	30.4	18.9	18.6	
August	14.3	23.0	18.0	24.4	14.5	20.7	12.4	16.4	
September	13.8	7.2	15.0	9.8	10.8	7.5	11.4	7.5	
October	4.5	5.4	9.4	6.3	0.3	0.6	-	0.9	
November	0.4	0.2	0.8	1/	-	-	-	-	
December	-	-	-	-	-	-	-	-	
Total[3/]	85.6	104.5	108.5	101.2	94.7	108.6	81.9	72.2	
	Total[3/]								
January	0.3	0.5	0.2	-	0.1	0.2	0.5	-	-
February	1/	-	-	-	-	-	-	-	-
March	1/	-	-	-	-	-	0.1	-	-
April	1.6	3.6	4.0	5.1	2.9	7.3	3.8	4.8	3.8
May	15.4	30.1	31.9	34.8	22.7	18.8	14.0	10.3	
June	38.5	49.7	53.6	29.6	39.7	40.4	27.1	23.3	
July	50.5	57.4	48.2	31.5	34.0	39.2	24.9	24.7	
August	45.1	51.9	33.7	36.0	26.0	33.4	19.7	23.2	
September	32.3	24.9	27.3	19.6	18.0	15.0	17.2	11.0	
October	20.3	13.2	33.2	12.4	4.7	7.1	5.7	5.4	
November	8.4	6.8	7.3	8.9	7.2	8.5	14.8	10.2	
December	5.9	9.4	0.3	6.3	5.0	6.1	7.1	6.2	
Total[3/]	218.3	247.5	239.7	184.2	160.3	176.0	135.0	119.1	

[1/] Includes a small amount of meal from other species.

[2/] Preliminary.

[3/] Figures may not add to total because of rounding.

Table 5.--U.S. imports of fish meal by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[1/]
	Thousand short tons								
January	8.6	9.5	25.4	18.5	31.0	16.0	15.3	42.0	90.9
February	8.1	14.3	18.8	40.1	35.3	25.5	25.2	44.4	49.0
March	18.7	20.5	18.5	40.5	40.1	53.7	33.6	74.1	54.7
April	10.4	19.1	26.4	26.6	56.0	39.7	39.5	50.0	62.3
May	9.5	25.1	25.3	31.1	59.5	30.5	35.0	39.0	
June	11.2	19.3	26.5	18.5	34.5	44.5	45.6	40.6	
July	13.1	18.7	25.9	43.2	28.9	18.7	49.0	47.6	
August	8.3	19.0	28.3	44.0	36.5	13.9	59.4	74.8	
September	9.5	19.9	13.9	35.3	34.1	6.8	43.3	55.7	
October	12.5	9.4	12.7	31.4	19.7	4.8	35.4	50.1	
November	6.1	25.6	11.9	17.4	25.7	5.7	35.7	63.0	
December	15.6	23.3	19.0	29.7	37.8	11.0	30.8	70.2	
Total[2/]	131.6	217.8	252.3	376.3	439.1	270.7	447.8	651.5	

[1/] Preliminary.

[2/] Figures may not add to total because of rounding.

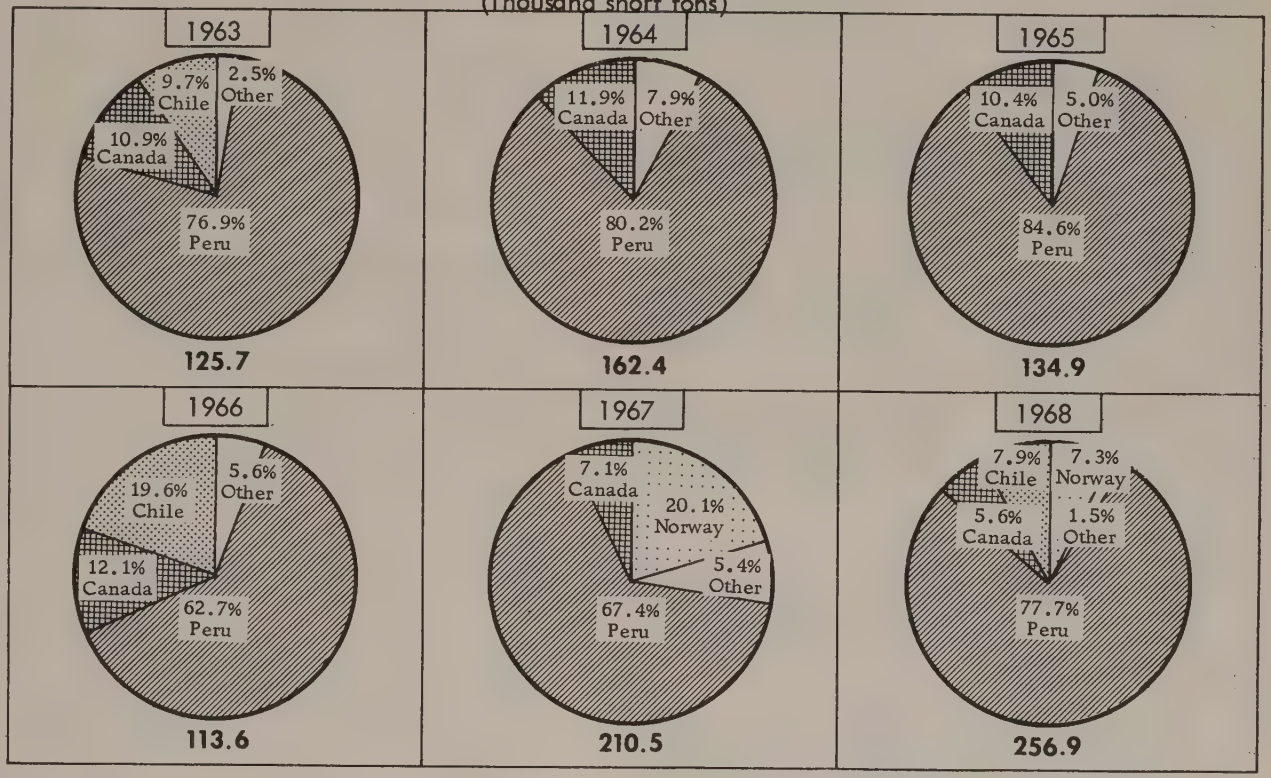
Table 6.--U.S. imports of fish meal by country of origin, January-April 1967, 1968, and 1963-67 average

Country of origin	1963-67 average		1967		1968	
	Thousand short tons	Percent	Thousand short tons	Percent	Thousand short tons	Percent
Canada	15.2	10.2	15.0	7.1	14.3	5.6
Chile	10.6	7.1	7.5	3.6	20.2	7.9
Norway	8.5	5.7	42.4	20.1	18.9	7.3
Peru	110.8	74.2	141.8	67.4	199.6	77.7
South and South West Africa	1.6	1.0	-	-	-	-
Other	2.7	1.8	3.8	1.8	3.9	1.5
Total[1/]	149.4	100.0	210.5	100.0	256.9	100.0

[1/] Figures may not add to total because of rounding.

U.S. FISH MEAL IMPORTS BY COUNTRY OF ORIGIN, JANUARY-APRIL 1963-68

(Thousand short tons)



U.S. Department of the Interior Neg. Econ. 231-68(7) Bureau of Commercial Fisheries

Figure 2

Total Domestic Supplies of Fish Meal--Up 17 Percent Over 1967

During the first 4 months of 1968, U.S. production and imports of fish meal totaled 275,400 short tons--up 17 percent from the same period in 1967 and up 62 percent from the 1963-67 average (table 7). So, even though fish meal production for January-April 1968 was below the same period for 1967, the increase in imports was enough to create an increase in total supplies.

Imports accounted for 93 percent of total supplies in January-April 1968, compared to 90 percent for the same period in 1967 and 88 percent for 1963-67 (table 8).

Table 7.--Total fish meal available in the United States: production plus imports, by month, 1960-68[1/]

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[2/]
	Thousand short tons								
January	12.4	12.2	28.3	20.8	33.1	19.2	18.1	47.7	92.8
February	11.2	16.4	22.4	43.0	37.6	28.4	27.5	48.3	51.0
March	21.8	23.3	22.7	43.2	43.2	57.5	39.2	79.1	58.5
April	16.5	25.2	35.8	35.0	64.1	51.0	50.8	60.0	69.2
May	29.3	59.6	65.8	71.4	91.6	55.6	55.3	56.2	
June	55.5	73.7	87.6	53.8	83.5	93.1	82.6	74.1	
July	69.4	82.1	81.5	82.1	74.1	68.8	85.5	84.0	
August	59.5	76.6	68.7	87.7	70.0	55.8	90.8	108.4	
September	48.0	42.7	45.4	60.0	56.9	27.9	66.5	76.0	
October	36.6	25.6	48.7	49.9	28.3	17.1	46.4	61.5	
November	16.9	35.7	22.1	30.8	36.4	17.8	54.7	78.4	
December	24.8	36.1	21.7	39.7	45.5	21.0	42.8	79.2	
Total[3/]	401.9	509.1	550.7	617.4	664.3	513.0	660.2	852.9	

[1/] Excludes meal made from shellfish.

[2/] Preliminary.

[3/] Figures may not add to total because of rounding.

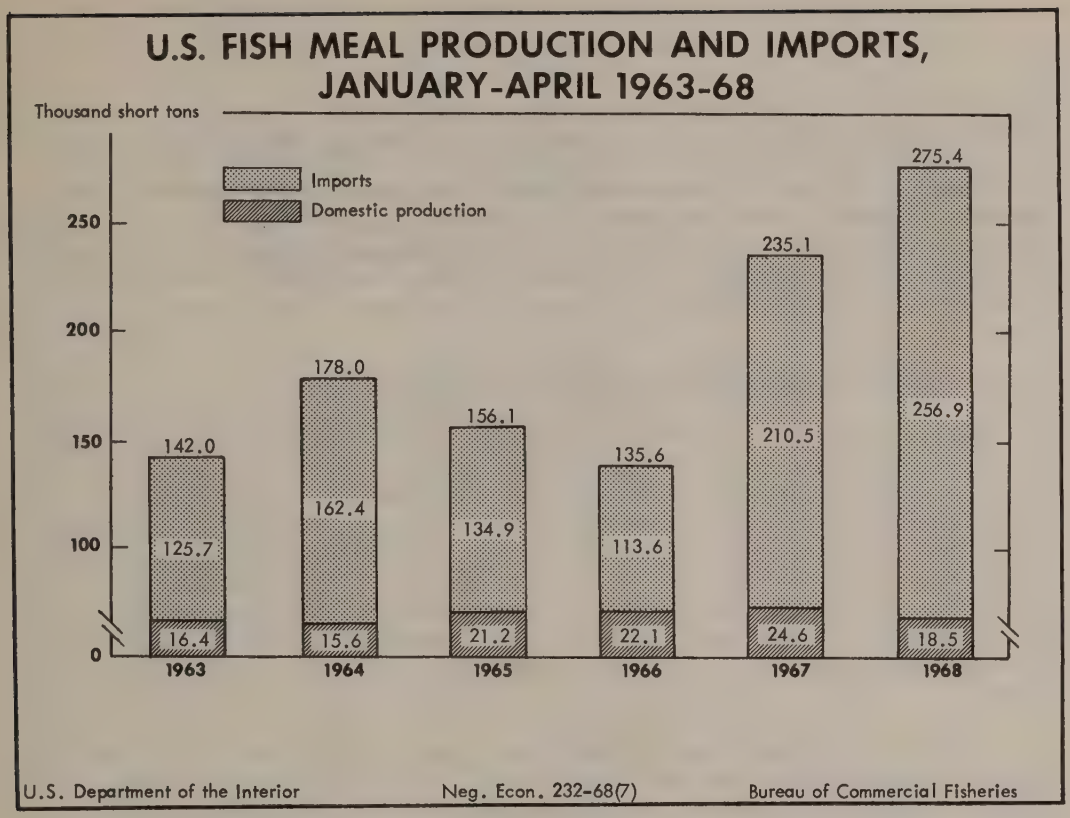


Figure 3

Table 8.--Percentage of total fish meal available in the United States that is imported, by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968
					Percent				
January	69.4	77.9	89.8	88.9	93.3	83.3	84.5	88.0	98.0
February	72.3	87.2	83.9	93.2	93.9	89.8	91.6	91.9	96.1
March	85.8	88.0	81.5	93.8	92.8	93.4	85.7	93.7	93.5
April	63.0	75.8	73.7	76.0	87.4	77.8	77.8	83.3	85.3
May	32.4	42.1	38.4	43.6	65.0	54.8	63.3	69.4	
June	20.2	26.2	30.2	34.4	41.3	47.8	55.2	54.8	
July	18.9	22.8	31.8	52.6	39.0	27.2	57.3	56.7	
August	13.9	24.8	41.2	50.2	52.1	24.9	65.4	69.0	
September	19.8	32.6	30.2	58.8	59.9	24.4	65.1	73.3	
October	34.2	36.7	26.1	62.9	69.6	28.1	76.3	81.5	
November	36.1	71.7	53.8	56.5	70.6	32.0	65.3	80.4	
December	62.9	64.5	87.6	74.8	83.1	52.4	72.0	88.6	
Average[1/]	32.7	42.8	45.8	60.9	66.1	52.8	67.8	76.4	

[1/] Weighted average.

World Fish Meal Production During January-March 1968

Total world production of fish meal during the first 3 months of 1968 was 968,600 metric tons (1,067,700 short tons)--up 7 percent over the same period in 1967 but about the same as in 1966 (table 9). The above production does not include Japan because monthly figures are not available. Japan has produced between 8 and 10 percent of world fish meal over the last few years.

F.E.O. Fish Meal Production, Exports and Stocks

During January-March 1968, members of F.E.O. produced an estimated 845,400 metric tons (931,900 short tons) of fish meal--up 3 percent over the same period last year but down 3 percent from 1966 (table 9). F.E.O. countries produced about 87 percent of world fish meal in January-March 1968, compared to 90 percent in 1966 and 1967. Peru produced a larger share of the fish meal in January-March 1968 than in 1966 or 1967--75 percent compared to 71 percent and 68 percent, respectively. The proportion of fish meal made by Chile and South and South West Africa increased slightly over 1967, whereas that of Norway was cut in half.

F.E.O. countries, except Angola and Iceland, exported 797,800 metric tons (879,400 short tons) of fish meal in January-March 1968--up 54 percent from exports for the same countries in 1967 (tables 10 and 11). Exports from all countries increased in 1968, but Peru's contribution was greatest--increasing from 333,200 metric tons in January-March 1967 to 550,400 tons in 1968, a 65-percent increase. Exports coming to the United States from F.E.O. countries totaled 163,700 metric tons (180,400 short tons) the first 3 months of 1968 (table 11). Peru accounted for 86 percent of all F.E.O. exports coming to the United States. Twenty-six percent of Peru's total exports came to the United States the first quarter of 1968 compared to 27 percent the same period in 1967. April exports for Peru are reported to be 167,000 metric tons (184,100 short tons)--24 percent of these exports are to the United States.

Stocks of fish meal held by F.E.O. countries (except Angola and Iceland) on April 1, 1968 were 795,700 metric tons (877,100 short tons)--down 7 percent from the amount held on April 1, 1967 (table 12). Peru held 671,300 metric tons (740,000 short tons) of fish meal or 84 percent of total F.E.O. stocks on April 1, 1968, compared to 596,300 metric tons or 69 percent of total stocks on April 1, 1967. Peru's stocks were reported to be 712,500 metric tons (785,400 short tons) on May 1 of this year and 727,900 metric tons (802,400 short tons) on June 1. On June 1, 1967, Peru held 751,600 metric tons of fish meal.

Table 9.--F.E.O.[1] and total world production of fish meal, January-March 1966, 1967, and 1968

Country	1966		1967		1968[2]	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
Angola	13.5	1.5	9.5	1.2	N.A.	-
Chile	74.0	8.5	45.1	5.5	64.0	7.6
Iceland	24.2	2.8	22.5	2.7	[3]2.2	0.3
Norway	90.2	10.3	96.5	11.8	46.3	5.5
Peru	619.5	70.8	560.6	68.4	630.8	74.6
South and South West Africa	53.8	6.1	84.8	10.4	102.0	12.0
Total F.E.O.[4]	875.2	100.0	819.1	100.0	845.4	100.0
Total world[5]	971.7	-	907.8	-	968.6	-
Percent F.E.O. is of world	90.1	-	90.2	-	87.3	-

[1] Fishmeal Exporters Organization; members are those countries listed in the table.
[2] Preliminary.
[3] Iceland: January-February only.
[4] Figures may not add to total because of rounding.
[5] F.E.O. countries plus Belgium, Canada, Denmark, France, Sweden, the United Kingdom, the United States, and West Germany.

Table 10.—Total F.E.O.[1] exports of fish meal, and F.E.O. exports coming to the United States, by month, 1966, 1967, and 1968

Month	1966			1967			1968[2]		
	Total F.E.O. exports	F.E.O. exports coming to the United States[3]		Total F.E.O. exports	F.E.O. exports coming to the United States[3]		Total F.E.O. exports	F.E.O. exports coming to the United States[3]	
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
January	198.2	8.0	4.0	180.3	34.2	19.0	[4]276.7	79.1	28.6
February	173.7	19.3	11.1	203.5	36.0	17.7	[5]277.4	39.9	14.4
March	208.8	26.3	12.6	190.6	62.2	32.6	[5]251.5	44.7	17.8
April	181.4	32.6	18.0	198.5	41.5	20.9			
May	165.3	27.6	16.7	231.1	31.6	13.7			
June	184.9	37.6	20.3	234.1	33.6	14.4			
July	191.4	39.5	20.6	214.0	39.2	18.3			
August	164.2	48.6	29.6	224.2	63.1	28.1			
September	156.2	35.7	22.8	194.9	45.3	23.2			
October	156.5	28.5	18.2	219.1	40.4	18.4			
November	141.3	30.0	21.2	247.9	52.9	21.3			
December	226.8	23.9	10.5	280.1	61.3	21.9			
Total[6]	2,148.7	357.7	16.6	2,618.4	541.3	20.7			

[1] Fishmeal Exporters Organization; members are those countries listed in table 9.
[2] Preliminary.
[3] Based on imports of fish meal from F.E.O. countries as reported by the U.S. Department of Commerce, Bureau of the Census.
[4] Does not include exports from Angola.
[5] Does not include exports from Angola and Iceland.
[6] Figures may not add to total because of rounding.

Table 11.--Total F.E.O.[1] exports of fish meal, and F.E.O. exports coming to the United States, by member country, January-March 1966, 1967, and 1968

Country	1966			1967			1968[2]		
	Total exports	Exports coming to the United States[3]		Total exports	Exports coming to the United States[3]		Total exports	Exports coming to the United States[3]	
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
Angola	11.7	-	-	9.4	-	-	N.A.	-	-
Chile	50.7	12.7	25.0	30.4	6.5	21.4	45.6	9.8	21.5
Iceland	33.9	-	-	47.6	-	-	[4] 7.8	-	-
Norway	61.1	-	-	101.4	35.9	35.4	129.5	12.4	9.6
Peru	400.6	39.5	9.9	333.2	89.9	27.0	550.4	141.5	25.7
South and South West Africa	22.6	0.9	4.0	52.3	-	-	72.3	-	-
Total[5]	580.7	53.2	9.2	574.4	132.4	23.0	805.6	163.7	20.3

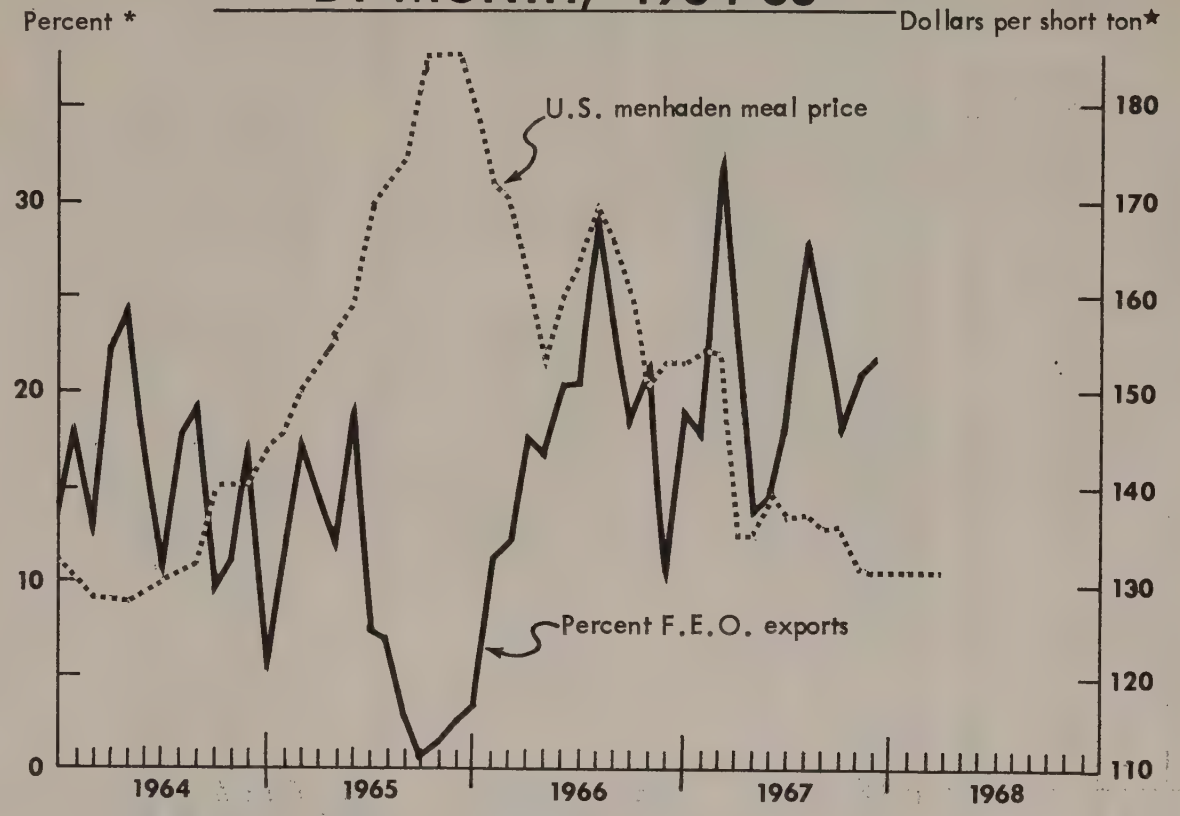
[1] Fishmeal Exporters Organization: members are those countries listed in the table.
[2] Preliminary.
[3] Based on U.S. imports of fish meal from F.E.O. countries as reported by the U.S. Department of Commerce, Bureau of the Census.
[4] Iceland: January only.
[5] Figures may not add to total because of rounding.

Table 12.--F.E.O.[1] fish meal stocks held April 1, 1966, 1967, and 1968

Country	1966		1967		1968[2]	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
Angola	4.4	0.7	2.8	0.3	N.A.	-
Chile	38.9	6.2	25.4	3.0	33.4	4.2
Iceland	27.6	4.4	16.7	1.9	N.A.	-
Norway	69.8	11.2	159.3	18.6	53.4	6.7
Peru	448.8	72.1	596.3	69.4	671.3	84.4
South and South West Africa	33.5	5.4	58.4	6.8	37.6	4.7
Total F.E.O.[3]	622.9	100.0	858.9	100.0	795.7	100.0

[1] Fishmeal Exporters Organization; members are those countries listed in the table.
[2] Preliminary.
[3] Figures may not add to total because of rounding.

PERCENT OF F.E.O. FISH MEAL EXPORTS COMING TO THE UNITED STATES, AND U.S. MENHADEN MEAL PRICE, BY MONTH, 1964-68



*Percent of F.E.O. exports coming to the United States

★U.S. menhaden meal price, F.O.B. east coast ports, New York quote

U.S. Department of the Interior Neg. Econ. 233-68(7) Bureau of Commercial Fisheries

Figure 4

Demand

Broiler Placements for First 4 Months--Down Slightly from 1967

Some of the factors that influence the demand for fish meal are: (1) the number of livestock produced during a given period of time; (2) the demand for commercially prepared feed for these livestock; and (3) the prices of competing feed ingredients. Broilers are the major consumers of fish meal in this country. Therefore, the number of broiler chicks placed on feed during a given period of time provides an indication of the potential demand for fish meal. During the first 4 months of 1968, 872.6 million broiler chicks were started in the 22 major broiler-producing States--down 2 percent from the same period last year but up 10 percent from the 1963-67 average (table 13).

An indication of the demand for broilers is the average price paid for those broilers. In the first 2 months of 1968, average broiler prices at the farm were below prices for the same months last year. During March and April, however, prices were higher this year than last: the average price for April was 14.2 cents per pound in 1968 and 13.8 cents per pound in 1967 (table 13).

Average Price of Soybean Meal for First 4 Months of 1968--Below 1967 Average

Soybean meal is a major competitor of fish meal in the protein feed market. The price of soybean meal (50 percent solvent) at Decatur, Ill., averaged $80.70 per short ton for the first 4 months of 1968 (table 15). The average price for the same period in 1967 was $84.70 per ton, whereas the average for the year was $83.45 per ton. The average price was $81.90 per ton in May 1968, and increased to $84.00 per ton the first week of June.

Table 13.--Broiler chick placements in 22 States, and average broiler prices at the farm by month, 1965-68

Month	1965		1966		1967		1968[1]	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.
January	204.8	14.6	191.6	16.3	192.0	13.9	195.9	13.5
February	179.2	15.1	199.0	16.4	204.1	15.4	199.4	14.6
March	185.2	15.6	201.3	17.2	217.6	14.3	261.1	14.6
April	244.7	15.0	269.6	15.8	272.9	13.8	219.9	14.2
May	202.4	15.4	217.8	16.7	217.6	13.3		
June	201.0	15.7	216.6	16.1	214.8	13.5		
July	240.9	15.5	262.0	16.1	259.7	14.7		
August	179.1	15.2	192.6	15.7	199.9	12.9		
September	166.7	14.5	187.0	14.6	224.7	12.6		
October	209.3	14.2	235.3	13.2	175.0	12.2		
November	175.2	14.6	188.8	13.5	185.7	11.5		
December	180.3	14.6	232.7	12.0	230.8	11.6		
Total placements[2] and average price[3]	2,368.8	15.0	2,594.4	15.3	2,594.8	13.3		

[1] Preliminary.

[2] Figures may not add to total because of rounding.

[3] Simple average.

Sources: Commercial Broilers: Annual Production and Weekly Placements, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

Table 14.--Average monthly price of soybean meal[1/] at New York City, 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Dollars per short ton						
January	N.A.	93.60	100.20	90.90	100.50	105.40	98.30
February	N.A.	93.90	97.20	93.30	101.40	100.90	97.50
March	N.A.	91.00	95.80	91.00	96.00	98.20	96.80
April	N.A.	90.80	94.20	93.20	97.30	96.60	96.70
May	N.A.	90.80	89.80	92.90	104.70	95.40	97.70
June	N.A.	92.80	88.40	99.60	117.70	101.60	
July	N.A.	94.80	87.60	100.40	121.90	102.30	
August	N.A.	98.50	86.10	96.30	119.80	99.60	
September	N.A.	98.75	95.00	115.00	106.40	102.10	
October	92.80	96.10	92.90	95.90	107.20	94.80	
November	92.50	96.40	88.60	99.80	102.20	96.80	
December	92.60	99.10	90.50	95.80	107.60	96.90	
Average[2/]	N.A.	94.70	92.20	97.00	106.90	99.20	

[1/] 50 percent protein, bulk.
[2/] Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Table 15.--Average monthly price of soybean meal[1/] at Decatur, Ill., 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Dollars per short ton						
January	64.60	76.70	85.40	75.40	85.00	89.30	81.30
February	62.20	76.90	82.60	77.20	86.20	85.20	80.20
March	65.50	76.00	82.30	76.10	80.00	83.70	80.40
April	68.30	74.10	80.00	78.40	82.40	80.70	80.90
May	70.90	73.90	74.20	77.70	89.00	80.10	81.90
June	73.10	76.10	73.20	85.10	101.00	87.20	
July	75.90	79.00	72.90	86.00	104.10	85.00	
August	76.60	82.40	71.00	80.50	106.10	86.90	
September	87.30	82.60	77.10	89.20	97.90	87.60	
October	76.10	80.00	76.80	80.80	91.50	78.20	
November	76.20	81.50	72.70	84.50	86.40	78.10	
December	75.80	84.10	75.50	78.30	92.70	79.40	
Average[2/]	72.70	78.60	77.00	80.75	91.85	83.45	

[1/] 50 percent protein, bulk.
[2/] Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Market for Menhaden Meal Strengthens in May 1968

From November 1967 to the latter part of April 1968, fish meal brokers reported that supplies of menhaden meal were exhausted. Therefore, the average price of menhaden meal during this period was nominal--quoted but few or no sales. The average nominal price of bagged, 60 percent protein meal at New York was $131 per short ton (table 16). The last week of April, supplies of menhaden meal were reported as exhausted in New York and very light in Chicago where prices were $125 to $129 per ton, bagged, f.o.b. Gulf Coast points.

During May 1968 the market for fish meal became somewhat stronger than in previous months, but brokers continued to report that supplies of menhaden meal were exhaused at New York and Chicago, and very light at New Orleans. The average price of 60 percent menhaden meal at New Orleans the last week of May was around $145 per ton, bagged, f.o.b. Gulf Coast points.

During June, supplies of menhaden meal were very light, and prices for 60 percent protein meal at New York were about $149.00 per ton, bagged, f.o.b. East Coast points, the latter part of the month. Prices for bagged menhaden meal at New Orleans ranged from $144.00 per ton at the beginning of the month, to $153.00 at the end of the month, and averaged $149.10 f.o.b. Gulf Coast points.

Table 16.--Average monthly price of menhaden meal[1/] f.o.b. East Coast points 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Dollars per short ton						
January	120.40	131.35	132.00	144.15	[2/]179.80	153.10	[2/]131.00
February	122.00	129.00	130.00	146.25	[2/]172.50	[2/]154.00	[2/]131.00
March	123.00	126.15	128.25	150.00	[2/]170.60	[2/]154.00	[2/]131.00
April	124.00	126.50	128.00	153.00	[2/]163.00	135.00	[2/]131.00
May	125.25	125.00	128.25	156.00	[2/]153.80	135.80	[2/]131.00
June	123.00	125.00	129.80	160.90	160.35	139.00	149.00
July	122.70	125.00	130.90	170.25	164.00	137.40	
August	123.25	125.00	131.00	172.10	169.00	137.10	
September	123.75	125.00	132.90	175.00	166.20	136.75	
October	126.80	127.70	140.20	185.40	160.00	136.00	
November	128.25	129.25	140.75	186.00	151.15	[2/]132.00	
December	130.50	133.90	140.75	186.00	153.10	[2/]131.60	
Average[3/]	124.40	127.40	132.75	165.40	163.60	140.15	

[1/]60 percent protein, bagged, as quoted at New York City.
[2/]Nominal price as presented in the Oil, Paint and Drug Reporter.
[3/]Simple average.

Sources: U.S. Department of the Interior, Bureau of Commercial Fisheries, and the Oil, Paint and Drug Reporter.

Price of Peruvian Fish Meal Increases 22 Percent in 2 Months

The average price of Peruvian fish meal (bagged, 65 percent protein) at New York rose from $115.20 per short ton f.o.b. East Coast ports in April to $140.00 per ton in June, a 22-percent increase (table 17). During the first 4 months of 1968, the average monthly price continued the general decline started in December 1965. In 1967, the price dropped from $148.20 in January to $121.00 in December. In January 1968, the average price was $120.20 per ton f.o.b. East Coast ports, and dropped to $115.20 per ton in April (table 17). The price was $114 to $116 per ton the last week in April and rose to $126 to $130 per ton the first week in May.

In June, New York prices ranged from $138 per ton at the beginning of the month to $142 at the end of the month, and averaged $140. At New Orleans, prices were $139.00 to $148.00 per ton and averaged $144.10 f.o.b. Gulf Coast ports.

Table 17.--Average monthly price of Peruvian fish meal[1/] f.o.b. East Coast ports, 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Dollars per short ton						
January	114.70	128.00	133.25	141.60	173.00	148.20	120.20
February	121.75	123.00	133.25	144.90	170.90	140.00	119.00
March	125.10	121.90	132.40	142.70	165.80	134.50	116.00
April	130.50	118.50	126.00	148.40	153.75	130.50	115.20
May	127.70	118.90	126.10	153.75	155.40	127.70	131.90
June	120.00	118.10	125.70	166.50	155.50	131.25	140.00
July	119.10	117.80	130.00	172.90	161.00	131.60	
August	118.75	115.85	132.90	181.00	161.00	131.50	
September	120.90	117.10	134.70	182.50	152.25	128.90	
October	126.20	122.75	140.00	184.90	143.10	124.30	
November	126.40	123.25	141.50	186.00	144.80	121.00	
December	126.75	130.40	141.50	180.25	152.50	121.00	
Average[2/]	123.15	121.30	133.10	165.45	157.40	130.85	

[1/] 65 percent protein, bagged, as quoted at New York City.

[2/] Simple average.

The last previous major increase in the price of fish meal was between the second quarter of 1964 and November 1965. The average price of Peruvian fish meal climbed from $125.70 per short ton in June 1964 to $186.00 in November 1965. The average price of menhaden meal rose from $128 per ton in April 1964 to $186 in November 1965. During this period, world stocks of fish meal were at a low level compared to 1966-68. Stocks held by F.E.O. countries ranged from 224,000 to 404,100 metric tons. Prices for soybean meal, a major competitor of fish meal, also generally increased during this period.

By April 1966, F.E.O. stocks had increased to 622,900 metric tons (686,600 short tons) and the average price for Peruvian meal had decreased to $153.75 per short ton. Stocks have held above this level since that time and prices have decline steadily into April of this year.

To see how prices of fish meal can affect consumption, look at prices and imports for the 3-year period July 1964 to June 1967. From July 1965 to June 1966, a time when fish meal prices were generally above $160 per ton, the United States imported only 255,100 short tons of fish meal, compared to 392,600 tons imported the previous 12-month period and 543,500 tons the following 12 months. The average price of menhaden meal during July 1965 to June 1966 was $172.90 per ton, and the average price of Peruvian meal was $171.80. The price of a ton of Peruvian meal averaged $143.20 during July 1964 to June 1965 and $143.90 during July 1966 to June 1967. This relationship between United States imports and the price of Peruvian fish meal at New York City indicates that if fish meal prices had averaged $143 per ton during July 1965 to June 1966, imports for that 12-month period would have been about 470,000 short tons or nearly 215,000 tons more than were actually imported.

Stocks of fish meal held by F.E.O. countries increased from 369,000 metric tons (406,700 short tons) on July 1, 1965, to 781,700 tons (861,700 short tons) on June 30, 1966, so that plenty of meal was available for export to the United States.

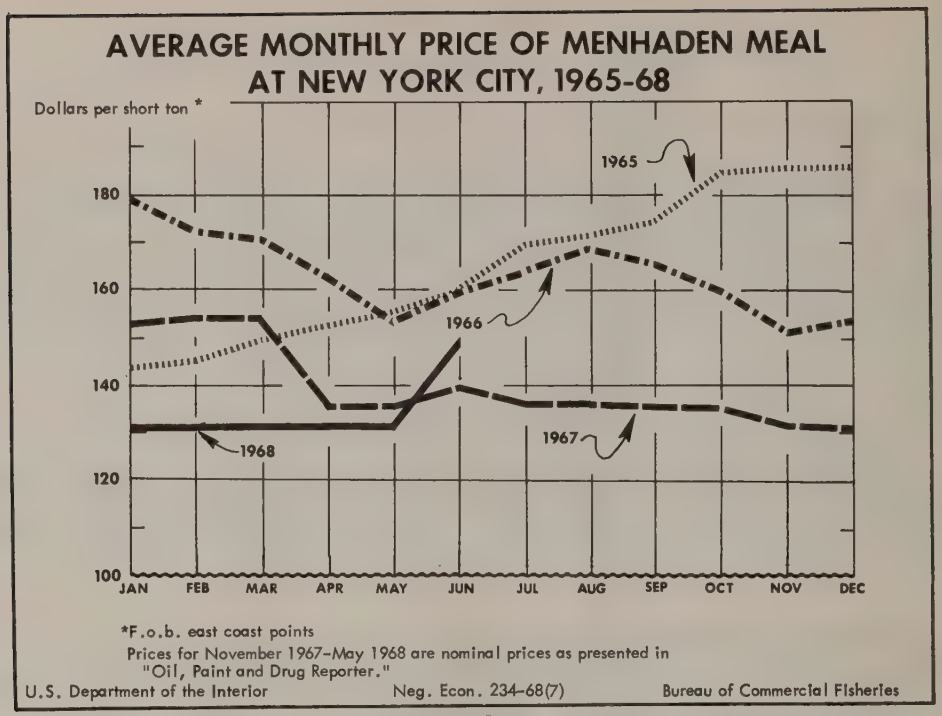


Figure 5

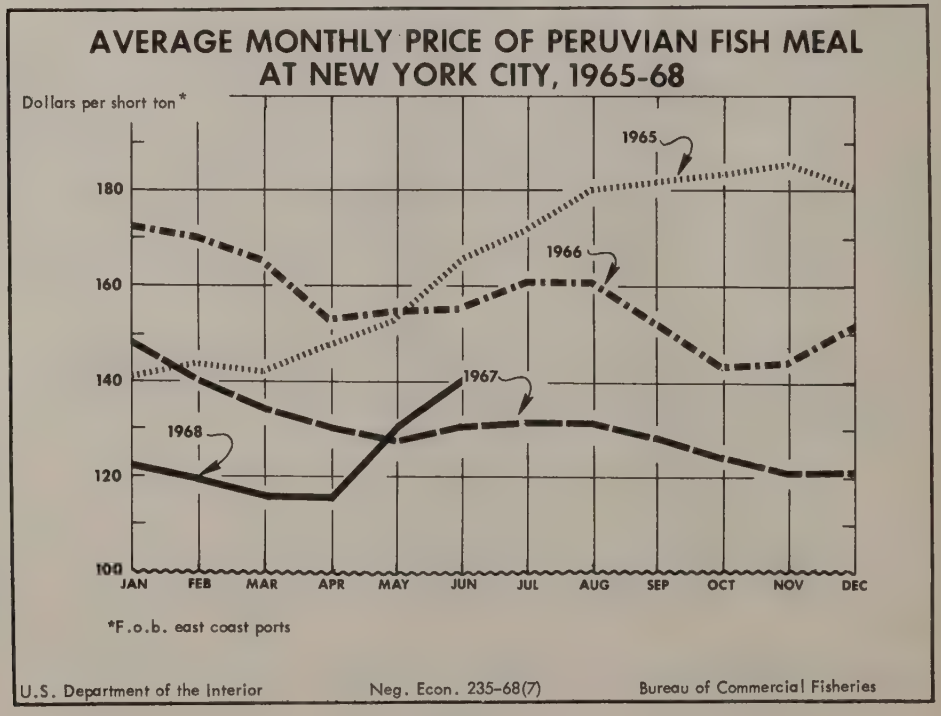


Figure 6

FISH SOLUBLES

Supply

January-April Production of Fish Solubles Down 25 Percent from 1967

An estimated 7,000 short tons of fish solubles were produced in the United States during the first 4 months of 1968 (table 18). This amount is 25 percent less than the 9,400 tons produced the same period in 1967, and 19 percent less than the 1963-67 average. Twenty-three percent of the solubles was from menhaden in January-April 1968, and 91 percent of this production was on the Gulf Coast.

Only 1,000 Tons of Fish Solubles Imported During January-April

The United States imported 1,000 short tons of fish solubles the first 4 months of 1968--down 60 percent from the same period in 1967 and down 52 percent from the 1963-67 average (table 19).

Total fish solubles available (excluding stocks, which are not reported) in the United States during January-April 1968 was 8,000 tons--down 33 percent from the total supplies for the same period in 1967 and down 25 percent from the 1963-67 average (table 20).

Table 18.--U.S. production of fish solubles by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[1/]
	Thousand short tons								
January	1.7	1.6	1.8	1.6	1.5	1.2	1.4	1.5	0.5
February	1.8	1.6	1.6	1.5	0.9	1.1	1.8	1.1	0.6
March	2.0	2.4	2.0	2.0	1.0	1.1	3.6	2.0	1.6
April	2.6	2.6	3.3	4.1	3.9	3.6	3.6	4.8	4.3
May	7.1	12.3	14.4	15.7	12.9	10.7	8.2	6.9	
June	18.6	16.1	21.6	14.1	18.9	17.8	15.1	13.5	
July	16.7	20.3	21.0	15.2	18.0	18.6	13.9	12.4	
August	14.6	16.9	16.0	18.7	14.7	18.0	12.7	12.2	
September	11.4	10.5	12.2	11.5	9.9	8.8	9.8	6.6	
October	6.5	7.5	13.3	7.4	5.1	6.7	5.3	4.9	
November	3.5	4.2	4.3	4.9	3.8	4.7	5.6	5.3	
December	2.8	4.6	1.7	3.5	2.7	2.5	2.4	3.4	
Total[2/]	89.4	100.6	113.2	100.2	93.3	94.8	83.4	74.6	

[1/] Preliminary.

[2/] Figures may not add to total because of rounding.

Table 19.--U.S. imports of fish solubles by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[1]
	Thousand short tons								
January	0.2	0.2	0.3	0.1	0.4	0.6	0.2	0.5	0.1
February	1.9	0.2	2.2	0.2	0.5	1.7	2/	0.1	0.1
March	0.1	0.1	0.3	1.1	0.2	0.2	0.2	0.1	0.7
April	0.1	0.2	0.3	0.2	0.4	0.3	1.4	1.8	0.1
May	0.1	0.3	0.3	0.4	0.3	0.2	1.2	0.3	
June	0.1	0.2	0.9	0.3	0.2	0.2	0.2	0.1	
July	0.1	0.7	0.3	0.3	1.5	0.1	0.2	0.1	
August	0.2	0.3	0.4	0.3	0.1	0.2	0.1	0.1	
September	2/	0.3	0.2	0.2	0.2	0.2	0.1	0.2	
October	-	0.1	0.3	0.4	0.2	0.1	0.1	0.2	
November	0.3	3.6	0.4	0.2	0.2	1.2	0.3	0.2	
December	0.1	0.5	0.4	3.2	0.3	0.1	0.2	0.1	
Total[3]	3.2	6.7	6.3	7.1	4.5	5.1	4.3	3.7	

1/ Preliminary.

2/ Less than 50 tons.

3/ Figures may not add to total because of rounding.

Table 20.--Total fish solubles available in the United States: production plus imports, by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[1]
	Thousand short tons								
January	1.9	1.8	2.1	1.7	1.9	1.8	1.6	2.0	0.6
February	3.7	1.8	3.8	1.7	1.4	2.8	1.8	1.2	0.7
March	2.1	2.5	2.3	3.1	1.2	1.3	3.8	2.1	2.3
April	2.7	2.8	3.6	4.3	4.3	3.9	5.0	6.6	4.4
May	7.2	12.6	14.7	16.1	13.2	10.9	9.4	7.2	
June	18.7	16.3	22.5	14.4	19.1	18.0	15.3	13.6	
July	16.8	21.0	21.3	15.5	19.5	18.7	14.1	12.5	
August	14.8	17.2	16.4	19.0	14.8	18.2	12.8	12.3	
September	11.4	10.8	12.4	11.7	10.1	9.0	9.9	6.8	
October	6.5	7.6	13.6	7.8	5.3	6.8	5.4	5.1	
November	3.8	7.8	4.7	5.1	4.0	5.9	5.9	5.5	
December	2.9	5.1	2.1	6.7	3.0	2.6	2.6	3.5	
Total[2]	92.6	107.3	119.5	107.3	97.8	99.9	87.7	78.3	

1/ Preliminary.

2/ Figures may not add to total because of rounding.

Demand

The demand for fish solubles is related to the same factors that affect the demand for fish meal: the number of broilers on feed and the prices of competing feed ingredients. These factors were discussed in the section on fish meal.

Prices

Menhaden Solubles Price Lowest in 3 Years

The average price of menhaden solubles was $53.75 per short ton f.o.b. East Coast plants in June 1968, compared to $60.50 per ton in January 1968 and $64.40 in June 1967 (table 21). From May 1965 when the average price was $53.75, prices rose steadily to a high of $81.90 in December 1966. Beginning in January 1967, prices declined steadily to the June 1968 average.

Table 21.--Average monthly price of menhaden solubles[1/] f.o.b. East Coast plants, 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Dollars per short ton						
January	58.00	65.00	75.00	58.60	66.25	80.85	60.50
February	58.75	66.25	75.00	59.40	66.50	79.00	63.75
March	59.60	62.50	62.25	61.25	66.70	70.75	61.25
April	59.70	61.25	62.25	56.25	68.75	64.60	56.25
May	56.25	61.25	62.25	53.75	68.75	64.00	54.05
June	53.10	61.25	62.25	55.75	68.75	64.40	53.75
July	53.25	61.25	62.25	56.85	68.75	64.05	
August	54.00	61.75	61.95	60.00	68.75	62.85	
September	55.40	64.10	61.20	61.25	72.50	61.25	
October	58.30	66.55	61.05	63.95	78.75	60.75	
November	64.95	75.00	61.25	65.25	79.25	60.00	
December	64.15	75.65	61.25	66.25	81.90	60.00	
Average[2/]	57.95	65.15	64.00	59.90	71.30	66.05	

[1/] In tank cars; prices quoted at New York City.

[2/] Simple average.

FISH OIL

Supply

January-April Production of Fish Oil--Up Slightly Over 1967

The United States produced about 6.6 million pounds of fish oil during January-April 1968--up 3 percent from the same period in 1967 but down 16 percent from the 1963-67 average (table 22). Oil produced from menhaden during January-April 1968 was 2.3 million pounds or 35 percent of total production. During the same period in 1967, 38 percent of the fish oil came from menhaden, whereas during 1963-67, an average of 65 percent came from that fish (table 23). Production of menhaden oil started in April in 1967 and 1968 and nearly all of it came from the Gulf Coast area.

May 1 Stocks at 47.6 Million Pounds

Stocks of fish oil in the United States at the beginning of May 1968 were 47.6 million pounds--down 40 percent from stocks held January 1 (table 24). These stocks do not include sperm oil. Stocks of fish oil on May 1, 1967, were 73.4 million pounds, and the 1963-67 average was 58.4 million pounds.

Table 22.--U.S. production of fish oil by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968[1/]
	Million pounds								
January	0.5	0.5	0.8	0.5	0.5	0.6	0.4	1.2	0.9
February	0.6	0.4	0.4	0.4	0.2	0.5	0.2	0.6	0.6
March	0.6	0.5	0.4	0.4	0.7	0.7	1.0	0.9	1.1
April	2.5	3.5	5.7	6.5	4.4	10.6	5.5	3.6	4.0
May	16.9	35.8	33.4	33.5	29.9	23.2	19.3	9.4	
June	37.1	51.3	54.9	28.2	42.9	41.6	34.7	20.5	
July	41.8	59.1	47.7	29.0	33.8	41.6	29.6	21.6	
August	38.1	51.3	33.4	34.6	28.4	37.8	22.5	22.4	
September	33.8	26.0	31.2	21.2	19.8	18.1	20.5	13.6	
October	23.5	16.1	39.0	15.0	5.6	9.5	7.8	9.3	
November	12.5	10.6	8.3	10.1	8.3	8.2	16.4	13.5	
December	8.0	11.6	0.7	6.4	5.7	3.1	6.8	5.8	
Total[2/]	215.9	266.7	255.9	185.8	180.2	195.5	164.7	122.4	

[1/] Preliminary.

[2/] Figures may not add to total because of rounding.

Table 23.--U.S. production of fish oil by raw material source, January-April 1967, 1968, and 1963-67 average

Source	1963-67 average		1967		1968[1]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Alewives	0.2	3.0	0.5	8.4	-	-
Groundfish	0.2	3.0	-	-	[2]	-
Herring	0.3	4.0	0.5	7.6	[2]	-
Menhaden[3]	5.1	64.0	2.4	38.3	2.3	35.5
Tuna, mackerel, and anchovies	1.2	15.8	1.9	30.5	1.1	16.5
Unclassified	0.8	10.2	1.0	15.2	3.2	48.0
Total[4]	7.9	100.0	6.4	100.0	6.6	100.0

[1] Preliminary

[2] Included in "unclassified."

[3] Includes a small quantity of other species.

[4] Figures may not add to total because of rounding.

Note: Percents are calculated with unrounded numbers.

Table 24.--U.S. stocks of fish oil at the beginning of the month, 1962-68[1]

Month	1962	1963	1964	1965	1966	1967	1968[2]
	Million pounds						
January	94.0	125.9	96.9	70.9	100.4	99.4	80.0
February	87.9	113.3	60.4	68.6	85.4	97.2	83.3
March	79.2	115.5	47.0	55.2	75.0	90.8	61.0
April	69.6	88.2	42.2	50.4	60.5	62.2	55.8
May	66.8	59.8	43.9	54.6	60.3	73.4	47.6
June	91.1	77.3	46.7	69.0	63.1	97.4	
July	107.7	97.4	55.5	80.9	64.7	100.7	
August	128.9	87.4	66.8	103.3	80.4	102.4	
September	110.8	96.0	78.0	136.2	87.9	103.2	
October	123.7	95.9	87.7	110.9	111.0	95.9	
November	133.3	76.8	66.9	101.7	102.1	102.4	
December	119.6	123.9	75.2	111.4	120.0	99.4	
Average	101.0	96.4	63.9	84.4	84.2	93.7	

[1] Includes mammal oil other than sperm oil, and includes hydrogenated fats and other fats and oils "in process."

[2] Preliminary.

Source: U.S. Department of Commerce, Bureau of the Census
Current Industrial Reports: Fats and Oils, Series M20K.

Demand

Domestic Use of Inedible Fish Oil Down 15 Percent from 1967

In the United States, fish oil may be used in the production of paint, varnish, plastics, printing inks, lubricants, and soap. Fish oil is also used in cooking in some countries. The United States used 10.7 million pounds of inedible fish oil the first 4 months of 1968--down 15 percent from the same period in 1967 and down 25 percent from the 1963-67 average (table 25).

Table 25.--U.S. industrial consumption of inedible fish oil, by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968 2/
	Million pounds								
January	4.4	5.0	5.2	5.0	3.9	3.2	2.4	2.9	2.6
February	3.7	4.5	5.0	3.8	3.9	3.2	3.5	2.8	2.6
March	4.9	5.9	5.3	3.9	3.9	3.3	3.3	2.8	3.0
April	4.0	5.1	5.3	4.0	4.6	3.4	3.5	4.1	2.5
May	4.1	5.7	5.5	4.2	4.2	3.0	3.7	3.1	
June	5.1	5.4	6.3	4.7	4.0	4.0	3.8	3.3	
July	4.7	5.7	5.0	5.0	3.4	3.2	2.7	3.0	
August	5.9	5.7	5.0	4.6	4.7	4.5	3.7	3.1	
September	5.7	5.7	5.2	4.2	4.2	4.3	3.9	3.2	
October	4.9	5.5	5.3	5.0	3.8	3.9	2.5	2.4	
Novmeber	4.9	5.1	4.8	3.7	3.6	4.4	2.7	2.5	
December	4.5	5.5	5.0	4.0	3.5	4.1	3.1	2.6	
Total 3/	56.8	64.8	62.9	52.1	47.7	44.5	38.8	35.8	

1/Includes mammal oil other than sperm oil.

2/Preliminary.

3/Figures may not add to total because of rounding.

Source: U.S. Department of Commerce, Bureau of the Census Current Industrial Reports: Fats and Oils, Series M20K.

January-April Exports Down 31 Percent from 1967

The United States exported 19.7 million pounds of fish oil during the first 4 months of 1968--down 31 percent from the first 4 months of 1967 and down 45 percent from the 1963-67 average (tables 26 and 27). Seventy-six percent of these 1968 exports went to Sweden, 17 percent went to the Netherlands, and 7 percent to Canada (table 27). During the same period last year, 37 percent of our fish oil exports went to Sweden, 34 percent to the Netherlands, and less than 1 percent to Canada. Twenty-three percent of fish oil exports went to the United Kingdom during January-April 1967, whereas no oil was shipped to that country the same period this year.

Table 26.--U.S. exports of fish oil by month, 1960-68

Month	1960	1961	1962	1963	1964	1965	1966	1967	1968 [1]
	Million pounds								
January	2.1	13.5	0.5	0.1	0.2	0.1	2.3	17.9	0.9
February	23.8	17.5	21.6	2.4	23.5	0.1	4.2	2/	6.0
March	3.2	5.6	19.1	44.4	0.2	11.4	9.9	10.5	12.6
April	5.7	7.4	10.3	28.5	22.8	0.1	0.1	2/	0.1
May	2.4	3.2	6.5	22.1	9.3	0.3	17.8	0.1	
June	15.6	21.0	4.9	0.3	0.1	18.1	12.9	0.8	
July	40.6	4.4	0.1	29.3	40.5	16.2	19.5	2.3	
August	1.4	13.3	33.3	37.5	9.6	21.2	6.1	24.8	
September	14.0	9.5	0.2	22.4	14.2	13.5	2/	10.2	
October	4.4	15.2	26.1	41.9	19.8	10.8	4.3	5.7	
November	14.6	1.4	0.2	0.1	0.1	0.2	0.1	2.2	
December	15.8	10.5	0.2	33.3	11.1	11.8	0.1	2.3	
Total	143.6	122.5	123.0	262.3	151.4	103.8	77.3	76.8	

1/ Preliminary.

2/ Less than 50,000 pounds.

Table 27.--U.S. exports of fish oil by country of destination, January-April 1967, 1968, and 1963-67 average

Country	1963-67 average		1967		1968[1/]	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Canada	0.2	0.6	0.1	0.4	1.4	7.1
Netherlands	5.7	15.9	9.7	34.2	3.4	17.1
Norway	3.9	10.9	-	-	-	-
Sweden	10.2	28.4	10.5	36.8	14.9	75.5
United Kingdom	9.3	26.0	6.6	23.2	-	-
West Germany	4.9	13.6	1.5	5.3	-	-
Other	1.7	4.6	2/	0.1	0.1	0.3
Total[3/]	35.8	100.0	28.5	100.0	19.7	100.0

1/ Preliminary.

2/ Less than 50,000 pounds.

3/ Figures may not add to total because of rounding.

Prices

Menhaden Oil Price Lowest in 5 Years

The average price of crude menhaden oil during January-April 1968 was 5.8¢ per pound f.o.b. East Coast plants--dropping from 6.0¢ per pound in January to 5.35¢ in April (table 28). The April price was the lowest since February 1963 when the average price was 5.40¢ per pound. In May and June 1968, the average price dropped still further to 5.25¢ per pound f.o.b. East Coast plants. In June 1967, prices averaged 6.95¢ per pound.

Table 28.--Average monthly price of menhaden oil[1/] f.o.b. East Coast plants, 1962-68

Month	1962	1963	1964	1965	1966	1967	1968
	Cents per pound						
January	4.75	4.70	8.40	9.15	9.50	8.90	6.00
February	4.75	5.40	8.35	9.50	9.70	8.90	6.10
March	4.75	5.50	8.50	9.50	9.75	8.60	5.75
April	4.75	5.75	8.75	9.50	9.75	7.20	5.35
May	4.70	5.60	8.50	9.45	9.75	6.90	5.25
June	4.40	6.50	8.65	9.15	9.60	6.95	5.25
July	4.20	6.75	8.75	8.95	9.40	6.70	
August	4.25	7.10	8.80	9.30	9.00	6.00	
September	4.05	7.30	9.05	9.50	9.45	5.80	
October	3.95	7.60	9.20	9.50	9.45	6.00	
November	4.00	7.75	9.40	9.50	9.20	6.00	
December	4.00	8.00	9.40	9.50	8.90	6.00	
Average[2/]	4.40	6.50	8.80	9.35	9.45	7.00	

[1/] Crude oil in tank cars; prices quoted at New York City.

[2/] Simple average.

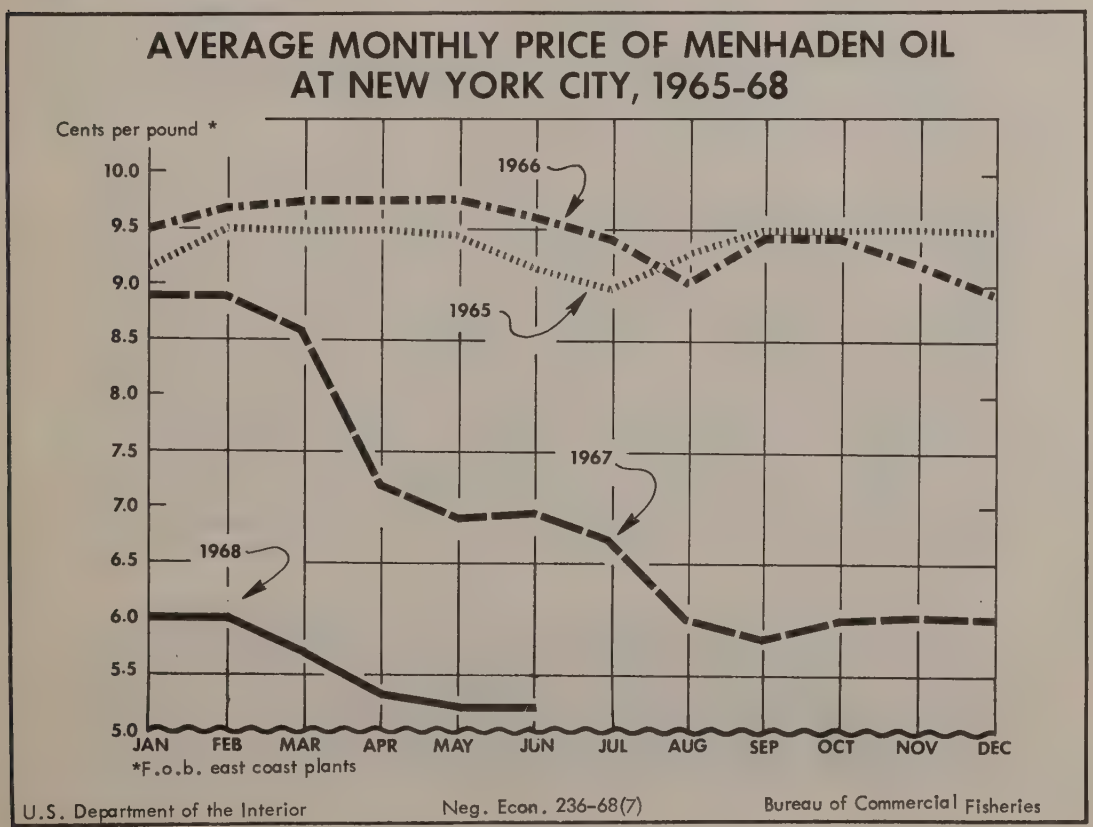


Figure 7

OUTLOOK

July-September 1968

FISH MEAL

Supply

U.S. production of fish meal was 90,400 short tons in the third quarter of 1967 and 91,000 tons in 1966. During July-September of this year, fish meal production is estimated at 75,000 to 85,000 tons. Menhaden meal production is expected to be 45,000 to 55,000 tons, or 60 to 65 percent of total production.

Imports of fish meal into the United States in the third quarter of 1967 were 178,100 short tons. In the third quarter of this year, imports are estimated to be 190,000 to 210,000 tons. This estimate assumes that U.S. prices of Peruvian fish meal will not be above $140 per short ton, f.o.b. East Coast ports, that they will be in line with European prices of Peruvian fish meal, and that they will be competitive with prices of soybean meal. Peru probably will provide at least 70 percent of the imports.

The total quantity of fish meal available (except stocks, which are not known) in the United States during July-September 1968 is estimated to be 265,000 to 295,000 tons.

F.E.O. fish meal production during the first 3 months of 1968 was 3 percent greater than the same period last year, in spite of the major decrease (52 percent) in Norwegian production. This increase in F.E.O. production does not take into account Angola's production during this period and March figures for Iceland. Production of fish meal by F.E.O. countries during July-September 1968 is expected to be at least as high as last year--about 390,000 metric tons (429,900 short tons). This production will come from anchoveta in Chile and Peru, pilchards in South and South West Africa, and herring, mackerel, and capelin in Iceland and Norway. Landings of anchoveta, pilchards, and capelin during the first few months of 1968 were more than last year. Peru's fishing season closed on May 31 this year, and will remain closed through August as it was last year. However, production of fish meal by Peru during September is expected to be as high as last year.

Total F.E.O. exports of fish meal during July-September 1968 are expected to be about 640,000 metric tons (705,500 short tons), assuming June price levels continue. Exports from Peru are estimated to be 375,000 to 395,000 metric tons. About 35 percent of Peru's exports (145,000-155,000 short tons) are expected to come to the United States during the third quarter.

F.E.O. stocks of fish meal are estimated to be 935,000 to 950,000 metric tons on July 1 this year. If the above expected production and export figures hold, then F.E.O. stocks at the end of the third quarter will be 685,000 to 700,000 metric tons. Last year, F.E.O. stocks were 997,700 metric tons on July 1 and 716,600 metric tons on September 30. Peru's stocks on July 1, 1968 are expected to be about 600,000 metric tons (661,400 short tons) or about two-thirds of total F.E.O. stocks. Stocks of fish meal held by Peru on September 30, 1968, are estimated to be about 325,000 metric tons (358,200 short tons)--about 45 percent of total F.E.O. stocks.

Demand

Two factors that affect the demand for fish meal are the number of broiler chicks on feed at a given time and the price of soybean meal in relation to the price of fish meal. The number of broiler chicks on feed during the third quarter of 1968 is expected to be 3 percent above the number on feed during the third quarter last year. Last year, 684.3 million chicks were placed on feed during July-September. This year, at least 705 million chicks are expected to be placed during that period.

In addition to the number of broiler chicks on feed, the relation between the price of fish meal and the prices of other feed ingredients is a major factor determining how much fish meal will be used in the United States. The ratio between the price of fish meal and the price of soybean meal has been found to be a major determinant of the use of fish meal in the United States. Within the limitations imposed by the number of broilers on feed and by the maximum amount of fish meal permitted in an animal diet, the lower the ratio of fish meal price to soybean meal price, the more fish meal will be consumed. The ratio of the price of Peruvian fish meal (65 percent protein) at New York City to the price of soybean meal (50 percent solvent) at Decatur, Ill., was about 1.65 to 1 the first week in June, compared to an average of 1.61 to 1 for May 1968 and 1.50 to 1 for June 1967. If the price ratio of 1.65 to 1 were to hold through the third quarter, and if about 705 million broiler chicks are placed in that quarter, then 240,000 to 260,000 tons of fish meal probably would be consumed. However, if the ratio were to drop to around 1.60 to 1 (brought about by either a decrease in price of fish meal or an increase in price of soybean meal), utilization could increase to about 270,000 tons.

In the previous section we stated that F.E.O. stocks of fish meal are expected to be 935,000 to 950,000 metric tons on July 1, 1968. This amount of fish meal should be more than enough to satisfy the needs of feed manufacturers during the third quarter. If F.E.O. stocks are 685,000 to 700,000 metric tons at the end of the third quarter, and if fish meal production is as high next year as this, more than enough meal will be available for the next 12 months.

U.S. feed manufacturers probably will use a maximum amount of fish meal in their rations if the price of fish meal remains competitive with prices of soybean meal and other competing feed ingredients. Our research indicates that if fish meal prices rise much above $145 per ton, U.S. use will be below the maximum.

FISH SOLUBLES

U.S. production of fish solubles the third quarter of 1968 is estimated to be 25,000 to 30,000 short tons. Imports are expected to be less than 500 tons for the third straight year.

FISH OIL

Supply

U.S. production of fish oil is expected to be 45 million to 55 million pounds during the third quarter of 1968. Production of menhaden oil is likely to be 38 to 48 million pounds or about 85 percent of total production.

If menhaden oil prices remain within or near the current range of 4.75 cents to 5.75 cents per pound f.o.b. East Coast plants, stocks of fish oil as reported by the Bureau of the Census should not be more than 75 million pounds at the start of the third quarter.

Demand

The industrial consumption of fish oil has declined steadily since 1961. In the third quarter of 1967, 9.3 million pounds were consumed. Even though the price of fish oil in relation to the price of other industrial oils, such as linseed oil and tall oil, is expected to favor the consumption of fish oil, total consumption for the third quarter is not expected to be over 10 million pounds.

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